

## CLAIMS

1. A peri-arterial blood flow booster apparatus for improving blood pressure and flow, to be implanted around a blood vessel of a patient, the booster comprising:
  - 5 a pressure applying device comprising at least one balloon, placed alongside a portion of the blood vessel and a restrainer for restraining the balloon and providing counter-forces;
  - a control console comprising:
    - an inflating unit for rapidly inflating and deflating the balloon, the inflating unit
    - 10 connected to the balloon;
    - sensing means for sensing electrocardiograph signals of the patient;
    - a control unit for controlling the operation of the inflating unit correlating to the electrocardiograph signals detected by the sensing means;
  - whereby when the balloon is inflated the restrainer forces it to compress the
  - 15 portion of the blood vessel preventing backflow and exerting forces on the blood vessel forcing blood within the portion of the blood vessel to flow antegradely.
2. The apparatus of claim 1, wherein the restrainer is in the form of a sleeve.
3. The apparatus of claim 2, wherein the sleeve is provided with internal
- 20 protrusion against which the balloon is pressed when inflated, preventing blood backflow effectively acting as a non-return valve.
4. The apparatus of claim 3, wherein the protrusion is in the form of an annular protrusion.
5. The apparatus of claim 1, wherein the balloon consists of at least two
- 25 inflatable compartments.
6. The apparatus of claim 5, wherein said at least two inflatable compartments are independently inflatable.
7. The apparatus of claim 1, wherein the sensing means is further provided for sensing blood pressure.

8. The apparatus of claim 1, wherein the control console is implantable within the patient's body.
9. The apparatus of claim 1, wherein the control console is small enough to be carried by the patient.
10. The apparatus of claim 9, wherein the control console is adapted to be attached to a belt to be worn by the patient.
11. The apparatus of claim 1, further provided with a sheath
12. A method for improving blood flow and pressure through an occluded blood vessel, said method comprising the steps of:  
providing a pressure applying device comprising at least one balloon, placed alongside a portion of the blood vessel and a restrainer for restraining the balloon and providing counter-forces;  
providing a control console comprising:  
an inflating unit for rapidly inflating and deflating the balloon, the inflating unit connected to the balloon;  
sensing means for sensing electrocardiograph signals of the patient;  
a control unit for controlling the operation of the inflating unit correlating to the electrocardiograph signals detected by the sensing means;  
sensing ECG signals of the patient  
inflating and deflating said at least one balloon in a predetermined rate, correlating to the ECG signals, so as to prevent backflow and compress the portion of the blood vessel in order to force blood within that portion to advance antegradely.
13. The method of claim 12, wherein the restrainer is in the form of a sleeve.
14. The method of claim 13, wherein the sleeve is provided with internal protrusion against which the balloon is pressed when inflated, preventing blood backflow effectively acting as a non-return valve.
15. The method of claim 14, wherein the protrusion is in the form of an annular protrusion.

16. The method of claim 12, wherein the balloon consists of two inflatable compartments.
17. The method of claim 16, wherein the two inflatable compartments are independently inflatable.
18. The method of claim 12, wherein the sensing means is further provided for sensing blood pressure.
19. The method of claim 12, further comprising implanting the control console within the patient's body.
20. The method of claim 12, wherein the control console is small enough to be carried by the patient.
21. The method of claim 20, wherein the control console is adapted to be attached to a belt to be worn by the patient.
22. The method of claim 12, wherein the blood vessel is an artery.
23. The method of claim 22, wherein the artery is an Iliac artery.
24. The method of claim 23, wherein both patient's Iliac arteries are treated.
25. The method of claim 22, wherein the artery is the Descending Aorta in the chest of the patient.
26. The method of claim 22, further comprising providing a sheath covering the balloon, placed between the blood vessel and the balloon will secure the balloon in place and provide an efficient facilitator for balloon replacement.
27. A peri-arterial blood flow booster apparatus substantially as described in the present specification accompanying drawings and claims.
28. A method for improving blood flow and pressure through an occluded blood vessel substantially as described in the present specification accompanying drawings and claims.